

MILITARY PERMIT TO FLY (IN-SERVICE) TEMPLATE

NOTES ON PRESENTATION OF THE MILITARY PERMIT TO FLY (MPTF) (IN-SERVICE) TEXT

1. The MPTF(In-Service) template defines the layout of a MPTF(In-Service) in terms of the parts and sections into which it is sub-divided.

2. In the MPTF(In-Service) template, the following conventions are used:

a. All normal text, including headings, will be used as shown.

b. Italic text within brackets thus *{example}* is used to show where text appropriate to a specific MPTF(In-Service) is required and must be deleted or replaced before issue of the final document.

c. *Italic text presented within shaded boxes, as this example, provides guidance on the required content.*

d. Where normal text is shown within double-line boxes, as this example, mandatory content is defined, but the presentation is not specified.

e. Where a table is shaded and italic text is used, as below, this indicates that it is an example of an acceptable format.

<i>Mod N°</i>	<i>Description</i>	<i>Affects MPTF(In-Service) or not fully integrated into Air System Document Set (ADS)</i>	<i>Reference</i>	<i>Review Date</i>

NON-APPLICABLE SECTIONS

3. The Parts of the MPTF(In-Service) (A to G) are mandatory for all Air Systems. The sections within each Part are also mandatory, and each heading must exist within all MPTF(In-Service)s. However, some Sections will not be applicable to some Air Systems (eg Remotely Piloted Air System (RPAS), C.1 Aircrew Equipment, or C.3 Auxiliary Power Units); in such cases, the section heading should be used, with the text 'This section is not applicable to *{Air System type and mark number}*'. Alternatively, there may be occasions where the Section is applicable, but there are no limitations that need to be expressed (eg C.10 - Undercarriage). In such situations, the section heading should be used with the text 'Information and procedures within Air System publications'.

SUB-SECTION TITLES

4. Each MPTF(In-Service) section may be divided into as many sub-sections as required for each individual Air System. The layout of these sub-sections is at the discretion of the Sponsor. In defining the sub-sections the following principles are to be observed as far as practicable:

a. The sub-sections are to be based on ASD / AIA¹ 1000D chapter methodology, or the documentation standard used by the Air System specific publications.

b. At a lower level of sub-sub-sections there may be no standard to guide the layout. In such circumstances, the author may create a layout that is most useful to the requirements of the target audience.

c. Part D of the MPTF(In-Service) is Air System specific, and therefore no detailed guidance can be given on its content or layout. However, the principles detailed above will be used to define how Part D will be used.

¹ AeroSpace and Defence Industries Association of Europe (ASD) or Aerospace Industries Association (AIA).

SUB-SECTION NUMBERING

5. The numbering of sub-sections will follow the same format as that used within the MPTF(In-Service). Therefore, in Section A of the MPTF(In-Service), Level 1 is an 'A' followed by a single digit eg 'A.n', Level 2 is 'A' followed by 'n.n', eg 'A.n.n' etc.

CLASSIFICATION

6. The Classification of an Air System MPTF(In-Service) should be in line with the guidance provided within JSP 440² Part 4 Section 1: Classification Policy³. If information of a higher classification than OFFICIAL – SENSITIVE must be included in the MPTF(In-Service), rather than in another part of the ADS (such as the Tactics Manual), or a classified part of the Aircrew Manual, this will be presented as a separate 'Classified Supplement' to the MPTF(In-Service). In these circumstances, both the main and supplementary parts of the MPTF(In-Service) have their own Preliminary Pages and MPTF(In-Service) Statement. The supplement uses the same numbering system for Parts and sub-sections as the main, but to keep it to the minimum number of pages, the supplement need only include those Parts and sub-sections that are directly relevant.

CONFIGURATION CONTROL

7. All pages in the MPTF(In-Service) (including the Preliminary Pages and any blank pages) must show their Issue and Amendment status.

8. If a 'Classified Supplement' is used it will need to be under separate configuration control (ie with its own Issue and Amendment Status). Independent Scrutiny must ensure that the main MPTF(In-Service) and a supplement are always coherent and both the main MPTF(In-Service) and the supplement must be cross-referenced to the Issue and Amendment status of the other.

ELECTRONIC FORMATS

9. The MPTF(In-Service) may be provided solely in electronic format⁴.

CONTENT APPROPRIATE TO THE MPTF (IN-SERVICE)

10. The MPTF(In-Service) is the primary document of the ADS and, where appropriate to provide supporting detail, it will contain cross-references to other documents within the ADS.

11. In judging what content is appropriate to the MPTF(In-Service), and how to handle safety information, authors need to consider 5 principles:

- a. Relevance. Is the information relevant to the aim of the MPTF(In-Service)? Does it help define the safety envelope of the Air System?
- b. Completeness. If the information is relevant, it needs to be presented without omissions.
- c. Target Audience. Is the information relevant to the target audience?
- d. Coherence. The MPTF(In-Service) is to be coherent with the other documents in the ADS. Early liaison with other ADS authors is essential to ensure that the whole ADS is a coherent and seamless source of safety information.
- e. Responsibility. Authors need to be aware of their overarching responsibility for providing safety information. Where an author decides not to include information they must take positive steps to provide an auditable trail to show why the information has not been included and bring this to the attention of the Air System Delivery Team (DT).

PROCEDURES

12. It is common for procedures to find their way into the MPTF(In-Service); however, only those procedures that are directly essential to enable compliance with a limitation should be included. All other procedures should be placed in the Aircrew Manual or Standard Operating Procedures (SOPs) issued by Operating Duty Holders (ODH), Force SOPs or a Technical Publication.

² Refer to JSP 440 – The Defence Manual of Security, Resilience and Business Continuity.

³ It is likely that most Air System MPTF(In-Service) documents will be marked OFFICIAL - SENSITIVE.

⁴ Refer to RA 1310 – Air System Document Set.

PLACING INFORMATION IN PARTS

13. Although the Part and section headings can be defined for the MPTF(In-Service), it can be rather more difficult to decide in which Part a specific Air System limit needs to be placed. It is recommended that the technique used to derive the Part headings (see Table below) is used for deciding in which particular MPTF(In-Service) Part information needs to be placed.

Table 1. Placing Information in Parts of the MPTF(In-Service).

Question	Response	Action
1. Is the information supported by a fully substantiated Safety Assessment that has been subject to independent scrutiny and been accepted by the Sponsor.	No	Clearance with Limited Evidence (CLE) is permitted for a MPTF (In-Service). Operational Emergency Clearances are prohibited.
	Yes	Go to Q2
2. Is the information of a temporary nature?	Yes	Place in Part E
	No	Go to Q3
3. Is the topic an actual limitation that the Aircrew must obey?	Yes	Go to Q5
	No	Go to Q4
4. Is the topic engineering information?	Yes	Place in Part A (directly or by explicit cross-reference)
	No	Not legitimate MPTF(In-Service) content, place elsewhere in the ADS
5. Does the limitation apply whenever the Air System is flown, regardless of configuration?	Yes	Go to Q6
	No	Place in Part D
6. Does the limitation affect the overall Air System flight envelope or handling?	Yes	Place in Part B
	No	Go to Q7
7. Does the limitation relate to an Air System?	Yes	Place in Part C
	No	Not legitimate MPTF(In-Service) content, place elsewhere in the ADS

14. Where different limitations apply to different modification states of the Air System or equipment (for example when Air Systems are being progressively modified In-Service) then split limitations must be stated. These will normally be of the form 'pre-mod nnn...; post-mod nnn...' and the modification identified at Part A within Section A.6. When appropriate, and when the Type Airworthiness Manager (TAM) and / or Type Airworthiness Authority (TAA) has confirmed that all Air Systems are to the same modification standard, the MPTF(In-Service) must be amended to remove the split limitation.

RECORDING OF MODIFICATIONS

15. Air System modifications will be recorded by the TAM and / or TAA in the ADS under their configuration control. The MPTF(In-Service) is not the repository of all modifications embodied on the Air System, however, some modifications need to be identified to Aircrew. A modification affects the



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MPTF(In-Service) when it is necessary to identify different limitations and / or procedures for the pre-mod and / or post-mod conditions of the Air System or equipment. Those modifications affecting the MPTF(In-Service) should be recorded in Part A.6 utilizing two headings for Design Modifications (DM) Part A.6.2 and Service Modifications (SM) Part A.6.3 and should be listed separately. Modifications may be listed numerically or by system (Engines, airframe, avionics, etc). Once a modification has been superseded (Fleet embodiment, subsequent modification, etc) it should be removed from the MPTF(In-Service).



CONTENTS OF THE MPTF (IN-SERVICE)

PRELIMINARY PAGES

PART A - AIRWORTHINESS AND DOCUMENT MANAGEMENT

PART B - AIR SYSTEM DESIGN AND HANDLING LIMITATIONS

PART C - SYSTEM LIMITATIONS AND CONSTRAINTS

PART D - ROLE LIMITATIONS AND CONSTRAINTS

PART E - TEMPORARY INFORMATION

PART F - CLEARANCE WITH LIMITED EVIDENCE (CLE)

PART G - MPTF(In-Service) HISTORY

Preliminary pages

Classified Supplement: When the document is a Classified Supplement the following statement will be inserted at the head of this page; it is vital that the Supplement and main document are coherent at all times:

This document is the Classified Supplement to the MPTF(In-Service) for the {Air System identifier}. This Supplement will be read in conjunction with the main document {document reference} at {Issue} and {amendment}.

The preliminary pages of the MPTF(In-Service) must contain the following sections:

*List of Contents
List of Amendments
List of Effective Pages
List of Abbreviations
Definition of Terms
Distribution*

Note: Conventionally each of the above elements of the Preliminary pages would start on a new page.

List of Contents

A List of Contents will be provided, to a level of detail defined by the Sponsor (in consultation with an appropriate TAA). The following represents the minimum list:

Preliminary pages

Part A - Airworthiness and Document Management

Part B - Air System Design and Handling Limitations

Part C - System Limitations and Constraints

Part D - Role Limitations and Constraints

Part E - Temporary information

Part F - Clearance with Limited Evidence (CLE)

Part G - MPTF(In-Service) History

Classified Supplement: When there is a Classified Supplement, the following statement will be inserted at the end of the List of Content, and the reference included at A.8.4:



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Classified Supplement – There is a Classified Supplement to this MPTF(In-Service). It is issued under a separate distribution.

List of Amendments

<i>An amendment list must be provided to record all amendments made to the MPTF(In-Service), eg:</i>		
<i>Amendment number</i>	<i>Date</i>	<i>Detail of Changes</i>

List of Effective Pages

<i>An important element of document control is a correct and auditable amendment procedure. To achieve this the MPTF(In-Service) will have a 'List of Effective Pages' which will be updated by every amendment eg:</i>			
<i>Page</i>	<i>Issue / Amendment</i>	<i>Page</i>	<i>Issue / Amendment</i>

List of Abbreviations

<i>The MPTF(In-Service) must provide a consolidated list of the abbreviations used throughout the document as an aid to the reader. Where appropriate, this list will include specific labels and / or captions in the Air System that are used to define limitations (in which case they must reproduce the presentation in the Air System exactly in relation to (mis-) spelling and capitalisation and not follow any particular style conventions in use in the MPTF(In-Service)). No further expansion of abbreviations need be used throughout the document.</i>
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Definition of Terms

<i>It is important to the use of the MPTF(In-Service) and the overall Airworthiness of the Air System, that there is a clear and common understanding of the terms used within the MPTF(In-Service). Therefore, every MPTF(In-Service) will have a section dealing with the definition of terms.</i>
<i>Many of the terms used within an MPTF(In-Service) are common to all Air Systems, and hence must be defined in all MPTF(In-Service). The following must be included in all MPTF(In-Service):</i>

Term	Definition
Airworthiness	The ability of an Air System or other Airborne Equipment or system to be operated in-flight and on the ground without significant hazard to Aircrew, ground crew, passengers or to third parties; it is a technical attribute of materiel throughout its lifecycle.
TAM-approved Design Standard	The Standard is the standard to which the MPTF(In-Service) applies. The TAM has the discretion to use a reference design standard that is other than the Design Organization (DO) Configuration Status Record (CSR). The TAM must be satisfied that there is a Safety Assessment for this reference design standard and that configuration control procedures are equivalent to those required for a CSR.
CAUTION	When the consequence of not respecting a limitation might be damage to the Air System or equipment.
Installation only	The equipment may be fitted but must not be operated in-flight. It will be isolated in accordance with a defined scheme unless it has been shown that inadvertent operation represents an acceptable hazard.
Note	To clarify the reason for a limitation.

Prohibited	Operation in the manner described, or of the equipment specified (as appropriate), is prohibited because the associated risk is unacceptable. The risk may be judged unacceptable because it is either too high or because there is insufficient knowledge to determine the likelihood of encountering a severe hazard.
Switch-on only	Operation of the equipment does not interfere with the proper operation of any other equipment or system fitted to the Air System. The equipment may be fitted and may be operated in flight within the limitations defined (which may therefore restrict such operation to specific phases of flight and parts of the flight envelope) but cannot be relied upon to function correctly (which may include incorrect functioning of any failure indications). The Air System will not be operated in any way that places any reliance whatsoever on the proper functioning of this equipment.
Cannot be Relied Upon and Not to be Relied Upon	“Cannot be Relied Upon” – correctly forms part of the definition of “Switch on only” which applies to phased clearances as defined in RA 1325 ⁵ . However, “Cannot be Relied Upon” and “Not to be Relied Upon” may also be used more widely to provide limitations on a system in a Special or Full Clearance. These limitation(s) should provide direction on how the system may be used ⁶ , and / or which parts or elements of the system, its information or envelope are unreliable and when ⁷ . It follows that a “Cannot be Relied Upon” or “Not to be Relied Upon” clearance may provide limitations for conditional or partial reliance rather than prohibiting “any reliance whatsoever” as is the case for “Switch on only”.
WARNING	When the consequence of not respecting a limitation might be death and / or injury.

In addition to these there may be other terms that are specific to the Air System type; these should all be clearly defined.

Presentation of WARNINGS, CAUTIONS and Notes

*The convention used for presenting **WARNINGS, CAUTIONS**⁸ and Notes within the MPTF(In-Service) needs to be explained. The appropriate statement will be selected from the following:*

The **WARNINGS, CAUTIONS** and Notes are placed as close as practicable to the relevant limitation / procedure.

or

The **WARNINGS, CAUTIONS** and Notes are called out and numbered within each sub-section, and placed at the end of the relevant sub-section within each Part.

or

The **WARNINGS, CAUTIONS** and Notes are called out and numbered within each Part and placed at the end of the relevant Part.

Distribution⁹

Necessary to ensure amendments are promulgated to all document holders.

⁵ Refer to RA 1325 – Release To Service Limitations

⁶ For example – Not to be used as the sole source of reference for position - for a particular moving map system.

⁷ For example – Should not be relied upon to provide altitude information of the target - for a particular Traffic Advisory System.

⁸ **WARNINGS** and **CAUTIONS** are written in upper case and bold.

⁹ The Sponsor may add other addressees to the distribution list.

Action:

Mandatory:

Sponsor	<i>Master copy and to promulgate the MPTF(In-Service)</i>
Accountable Manager (Military Flying) (AM(MF))	
Aircraft Operating Authority (AOA)	<i>As required</i>
TAA and / or TAM	
Nominated Independent Scrutineer	
Military Aviation Authority (MAA)	<i>For independent assurance of new Air Systems and Major Changes to existing Air Systems only</i>

Information:

Mandatory:

Sponsor Safety Personnel (if appropriate)	
DO	<i>For comparison with Air System design assumptions and limits.</i>
Officer Commanding Defence Aircrew Publications Squadron (OC DAPS)	<i>For comparison with Aircrew documentation data.</i>
Operating Data Manual (ODM) Agency	
Military Continuing Airworthiness Management Organization (Mil CAMO)	

Part A – Airworthiness and Document Management

A.1 MPTF(In-Service) STATEMENTS¹⁰

All MPTF(In-Service) statements must use a common standard of wording.

PREPARATION OF INITIAL MPTF (In-Service) Recommendation

I recommend the initial issue of the MPTF(In-Service) Recommendation for the *{Air System type and mark}* to the TAA for approval by the appropriate Operating Centre Director (OCD).

{Signature}

{Name}

{Appropriate and nominated TAM for the Air System}

{Date}

APPROVAL OF INITIAL MPTF (In-Service) Recommendation ISSUE

I recommend the initial issue of the MPTF(In-Service) Recommendation for the *{Air System type and mark}* to the appropriate Sponsor.

{Signature}

{Name}

{Appropriate and nominated TAA for the Air System}

{Date}

AUTHORIZATION OF INITIAL ISSUE

The *{Air System type and mark}* is Released to Service flying subject to the limitations stated in this initial issue MPTF(In-Service).

The limitations of the MPTF(In-Service) are the definitive limits for the Air System in Service. Where any conflict arises between this MPTF(In-Service) and any other Air System documentation, the limitations in the MPTF(In-Service) are overriding.

¹⁰ On initial Issue for new Air Systems and Major Changes that result in the Mark Number for the Air System changing, the MPTF(In-Service) Recommendation must be approved by the 2* OCD and the MPTF(In-Service) must be authorized by the Sponsor.



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Authorized holders of the MPTF(In-Service) are to ensure that all MPTF(In-Service) documents that define current flight limitations are kept with this authority under one cover.

The authority for approving changes to this MPTF(In-Service) is vested in myself as Sponsor of the Air System.

{Signature}

{Name}

{Sponsor}

{Date}



OFFICIAL when completed

CERTIFICATION OF SAFETY AND AIRWORTHINESS

I certify that the {Air System type and mark}, when operated in accordance with the MPTF(In-Service) at Issue {insert issue no} Al {insert amendment number}, including those CLE listed in Part F.1, is airworthy and that the overall risk is in the order of the Project Safety Target.

Clearances in Part E and F that are not supported by a fully substantiated Air System Safety Case (ASSC) or Equipment Safety Assessment are authorized for inclusion in the MPTF(In-Service) by the Sponsor.

{Signature}

{Name}

{Nominated Type Airworthiness Authority for the {Air System Identifier}}

{Date}

The authority for the exposure to, and the ownership and management of, the residual risk associated with the clearances in Part E and F lies with the AM(MF) chain.

{Signature}

{Name}

{AM(MF) {Air System Identifier}}

{Date}

A.2 Introduction

A.2.1 Purpose: The initial MPTF(In-Service) Recommendation is the statement by the TAM, certified by the TAA and approved by the OCD, to the Sponsor that an acceptable Equipment Safety Assessment has been prepared for the Air System and its equipment, and forms the basis for the initial MPTF(In-Service) of the Air System.

The MPTF(In-Service) describes the approved Air System configuration(s), the operating envelope, limitations, design standard, standard of operational software and the parameters within which the ASSC has been established, and to which the Air System or equipment may be flown in Service regulated flying. It also includes the approved Special Clearances and advice on their application.

A.2.2 Structure: This MPTF(In-Service) comprises MPTF(In-Service) statements and 7 supporting parts:

Part A covers the purpose and management of the MPTF(In-Service) and any other relevant information that does not appear as a flying limitation.

Part B covers limitations on the handling and use of the basic Air System.

Part C covers those additional limitations and constraints that may be imposed by systems integral to the Air System.

Part D covers those limitations and constraints imposed when the Air System is operating in a particular role.

Part E details Temporary Clearances and the management of temporary information.

Part F details Clearances with Limited Evidence.

Part G enables the production, content and evolution of the MPTF(In-Service) to be audited.

The limitations in Parts B to E may be either: for normal use (ie in peace and war), or for operational emergency use only.

All permanent information that has been derived from the ASSC will be included within the main Parts B to D, of the MPTF(In-Service), with temporary information, also having been derived from the ASSC, being covered by Part E.

A.2.3 Amendment: Amendments will be promulgated automatically to the agencies detailed within the distribution list. Suggestions for amendment are to be forwarded to:

{Contact details of the Operator}

A.3 Description

The *{Air System identifier}* is an *{Air System description}*, procured against *{reference to agreed characteristics against which contract was let}* for use by *{service operator}* in the following roles:

{Primary Roles}

{Secondary Roles}

{Tertiary Roles}

The *{Air System identifier}* was designed to meet the requirements of *{Type Certification Basis (TCB), design standard eg EASA, JAR, FAR, Def Stan (including anthropometric considerations)}*. It is manufactured in *{country of origin}* by *{manufacturer}* under *{arrangements to ensure manufacture will meet the design}*.

The DO(s) for various elements of the Air System are listed below:

This list will highlight all DOs who have a role in maintaining the Configuration Control of the Air System.

Air System: *{Air System DO and contact details}*

Engine: *{Engine DO and contact details}*

Equipment or major system: *{Equipment or Co-ordinating DOs}*

The MAA has examined compliance with the Type Certification Basis (TCB) and has issued a Military Type Certificate / Statement of Type Design Assurance / Approved Design Change Certificate *{delete as appropriate}* file reference ###.

A.4 Air System Life and Fatigue

The limitations in Parts B, C and D are valid for the life of the Air System. The Air System life is *{eg x hours or assessed on condition}*. This life and elements of the Maintenance and servicing schedule are based on the following assumed spectrum:

{Design Usage Spectrum}

A.5 Statement of Operating Intent and Usage (SOI / SOIU)

The use of the *{Air System identifier}* has been reviewed by the AM(MF), TAM / TAA, within the roles and fleets as detailed below:

{List of all Marks, Roles or fleets (groupings) of Air System that operate to different usage spectrum.}

The Statement of Operating Intent / Statement of Operating Intent and Usage (SOI / SOIU) *{delete as appropriate}* for *{Air System identifier}* has been issued at *{SOI / SOIU reference}* and has been passed to *{Air System DO}* for comparison against the assumed design spectrum. Any perceived

differences between the Air System use described by the SOI / SOIU and the way in which the Air System is actually being operated are to be highlighted to {SOI / SOIU issuing authority} for resolution or SOI / SOIU amendment.

The current SOI / SOIU for this Air System is {SOI / SOIU reference}, issued {date} the key points of which are:

{SOI / SOIU executive summary}

A.6 Air System Configuration

The design standard of {Air System identifier} to which this MPTF(In-Service) applies is given below:

Users of the MPTF(In-Service) are to note that, unless listed or referenced below, a Modification / item of equipment is not authorized to be fitted or used. In case of doubt, refer to {contact details for TAM}

Within section A6 the Air System Configuration will be built up through the sub-sections of:

A.6.1 Basic Design Standard

The initial design of the manufacturer. If there are several DOs, then multiple entries will be required.

Production Design Standard(s). Configuration Status Record {number and issue state}

A.6.2 Design Modifications

This will provide a cross-reference to a list that is under the configuration control of the TAM / TAA, all DM introduced since the initial design, including those that represent full design incorporation of SM.

DM affecting the MPTF(In-Service):

Design Modifications affecting the MPTF(In-Service):

Mod N°	Title	Reference

A.6.3 Service Modifications

This will provide a cross-reference to a list that is under the configuration control of the TAM / TAA, all SM introduced since the initial design.

SM affecting the MPTF(In-Service):

Service Modifications affecting MPTF(In-Service)

Mod N°	Title	Reference

A.6.4 Other equipment

Subject to Sponsor's discretion, Modifications or authorisations for any equipment that is fitted to, or carried in, the Air System but is not covered by sub-sections A.6.1, A.6.2 or A.6.3 (ie Equipment Not Basic to the Air System). Everything listed under 'Other Equipment' must have a Safety Assessment to determine the safety impact and any associated limitations incorporated in the ADS. Such Safety Assessments may be integral to (or supplements to) the Equipment Safety Assessment, or can be based on the equipment's own Safety Assessment, provided specific consideration of the Air System integration aspects is added.

Freight carried in accordance with standard rules is not included.

Aircrew Equipment Assemblies (AEA)

This section should detail the AEA that has been specifically cleared for use with the Air System. Ideally cross reference should be made to AEA schedule DAP108B-0001-1 (providing appropriate procedures are in place for the Sponsor to approve AEA introduction), thereafter the table of AEA in the MPTF(In-Service) should endorse a limited amount of AEA. The limitations for AEA will be given at C.1.

The following further sub divisions are suggested, but others may be used at the discretion of the TAM / TAA.

Role Equipment (when applicable)

The limitations for Role Equipment will be given at C.21 or Part D, as appropriate.

Armament and non-armament stores (when applicable).

The limitations for armament and non-armament stores will be given at C.20 or Part D, as appropriate.

Airborne Equipment (AE) (when applicable).

Helicopter Under-Slung Load Equipment (HUSLE) (when applicable).

Cleared Carry-on Equipment (when applicable).

The limitations for AE, HUSLE and Miscellaneous Items of Carry-on Equipment will be given at Part D. Where a Special Clearance is provided it is referenced in Part E or F.

A.7 Related Documents

A.7.1 The production design is airworthy when operated by qualified Aircrew within the limitations promulgated in Parts B, C, D and E of this MPTF(In-Service) and in accordance with the information and provisions contained in the following related documents:

Enter in the form given below for all Airworthiness related documents, including: AM, ODM, FRCs, Tech Pubs, MOD F700, etc.

{Document} to the latest standard, published and maintained by {publishing organisation eg OC HS, ODM Agency} on behalf of {sponsor eg TAA / ODH / AM(MF)}.

A.7.2 To ensure the Air System retains its design Airworthiness it will be serviced and maintained in accordance with:

{Tech Pubs reference} to the latest standard, published and maintained by {publication organization} under the authority of {document sponsor}.

{Component lifing policy reference} to the latest standard, published and maintained by {publication authority} under the authority of {document sponsor}.

The following sub-section is used when appropriate.

A.7.3 Other documents referred to in this MPTF(In-Service) which contain information relevant to the Airworthiness and operation this Air System are:

{Document Reference eg BRd766C} to the latest standard, published and amended by {publication organization} under the authority of {document sponsor}.

The following sub-section is used when appropriate to a main MPTF(In-Service) document that has a Classified Supplement, or to the Supplement itself.

A.7.4 The Classified Supplement {Document Reference}, {Issue}, {Amendment}.

or

The main MPTF(In-Service) {Document Reference}, {Issue}, {Amendment}.

Part B – Air System Design and Handling Limitations

This part of the MPTF(In-Service) contains Air System design and handling limitations that provide for airworthy operation of the Air System by qualified Service Aircrew. This part covers the information to Aircrew, for limitations that are basic to flying the Air System without external stores or other role equipment fitted. Thus it covers items such as: speed, altitude, manoeuvres, environmental conditions, take-off & landing etc. They are to be expressed in a manner that allows them to be respected by the Aircrew. The conditions pertaining to a particular limit are to be expressed unambiguously. Where the meaning of a term is not formally defined it needs to be explained (eg ramp mass). Conflict, or perceived conflict, of information will be avoided. When operation is dependent on the Air System configuration this will be expressed unambiguously (eg including reference to the relevant modification number).

Where a Special Clearance is appropriate, it is referenced in Part F and the detail is placed in Part B.

B.1 Environmental Conditions

Snow, icing, cold weather limits; hot weather limits; operation in sandy or dusty environments.

B.2 Temperature Envelope

Maximum and minimum temperatures (ie with reference to International Standard Atmosphere see also Def Stan 00-970, Part 1, section 7) for ground operation and flight; dew point limits; hot and cold soak limits. To assist the Aircrew an indication needs to be provided as to where the temperature will be measured.

B.3 Flight Envelope

Altitude / Speed / All Up Mass limits expressed in written or (preferably) graphical form (eg flight velocity diagrams). Instrument flying and degraded mode flight envelopes, formation flying, AAR envelope, speeds limits for systems (eg flaps, undercarriage) and degraded systems (eg one hydraulic system) etc.

B.4 Mass and Centre of Gravity

Maximum all up mass (AUM) and any other AUM related limits eg maximum take-off mass if different to landing mass, maximum towing mass, jacking mass slinging mass. Longitudinal and lateral centre of gravity limits. This may be a graph with AUM and CG as the axes. For Fixed Wing Air Systems, it may include: ramp mass, maximum take-off mass, maximum overload take-off mass, maximum landing mass and maximum fuel mass. (Note that this document takes the scientific view that mass is not the same as weight).

B.5 Manoeuvre Limits

Angle of bank limits (may be a graph); G limits, incidence, stalling and spinning, roll limits, aerobatics and unusual manoeuvres. For Rotary Wing Air Systems, it may include: hovering and low speeds flight envelope; spot turn limits. Note any additional limits with external configurations by referring to roles (Part D).

B.6 Ground Operations, Take-Off and Landing

Airfield or alternative surface limitations; ground running restrictions; towing and taxiing; Air System tie down / restraint arrangements for engine ground runs; for Rotary Wing: rotor brake, rotor engaging and disengaging; cross wind take-off and landing; maximum rate of descent on landing; Air System arresting systems; sloping ground limits; undercarriage, tyres and brakes limits; taxiing limits; running take-off and running landing limits; engine off landings. Limitations on ship operations: ships from which operation is cleared or prohibited, airspeed and approach limits, landing spots etc.

B.7 Instrument and Night Flying

Limitations for unaided instrument or night flying (ie without NVGs etc). Any special to type limits which need to be observed only at night. Any external configurations which affect these and refer to Part D. Refer to instrument flying envelope at Paragraph 1. Helicopter Type Allowance (needs to state if pressure error is or is not included) and any special to type limits.

B.8 Electro-Optic Flying

Air System / equipment combination related limits only; NOT equipment related limits for flying with NVG, FLIR, visor displays etc. May include primary and reversionary modes. Equipment-related limitations (eg those relating to temperature storage of NVG) must not be included in the MPTF(In-Service) but must appear in the appropriate equipment publication. Aircrew will be aware of equipment limitations by receiving the required training before they are authorized to use it.

B.9 Electromagnetic Compatibility

Basic Air System HIRTA limits; reference to any additional limits due to role configuration (Part D).

B.10 Minimum Crew

Minimum Crew. The minimum number of Certificate of Qualification on Type (CQT) Aircrew (Pilot & Non-Pilot) will be stated for all relevant flight conditions. Additionally, due to the nature of RPAS operations, the minimum number of ground crew required during the launch and recovery phase will be stated.

Guidance Material. In determining minimum crew, the following factors will be considered: maintenance of lookout, conduct of normal and emergency operating procedures and crew workload. Stipulation of minimum crew by task (eg take-off and landing) or crew position (eg cockpit seat or RPAS ground control station position) may be required.

Guidance Material. Operation of the air system by non-CQT personnel (eg test flying, students, passengers, supernumerary crew) as permitted within the MRP 2000 Series, will be detailed in ADH / AM(MF) Orders.

Table example:

Flight Condition	Day VFR	Night VFR	IFR	NVD
<i>Pilot CQT Aircrew</i>				
<i>Non-Pilot CQT Aircrew</i>				

Part C – System Limitations and Constraints

This part of the MPTF(In-Service) covers those systems integral to the Air System and contains limitations that provide for airworthy operation of the Air System by qualified Service Aircrew. Only system limitations that have an impact on the airworthy operation of the Air System, to a required performance standard, by qualified Service Aircrew are to be included. They are to be expressed in a manner that allows them to be respected by the Aircrew. The conditions pertaining to a particular limit are to be expressed unambiguously. Where the meaning of a term is not formally defined (eg ejection mass) it needs to be explained. Conflict, or perceived conflict, of information will be avoided. When operation is dependent on the Air System configuration this will be expressed unambiguously (eg including reference to the relevant modification number).

Where system limitations are wholly described in Part B they need not be repeated in Part C. Where this is not the case, system limitations need to be comprehensively covered under the relevant heading.

Role-related limitations (ie those covering different external stores configurations and specific roles) will appear in part D.

Where a Special Clearance is appropriate, it is referenced in Part F and the detail is placed in Part C.

C.1 Aircrew Equipment

Generally cleared by exception; that is to say: if it is issued for use it is authorized to use. Where there are Air System limitations associated with the equipment / Air System combination they will appear here. Equipment limitations will only appear in the MPTF(In-Service) when they need to be brought to the attention of the Aircrew and do not exist elsewhere. For MPTF(In-Service) purposes Aircrew equipment includes Carry-on Equipment.

Any items specifically cleared for use need to be either listed in the AEA section of the Design Standard in Part A or covered by a modification.

C.2 Fuels, Oils & Lubricants

List of all permitted fuels, oils and lubricants, with associated limits if any.

C.3 Auxiliary Power Units

All APU and starter system limits; air and ground use; system temperature limits; starting limits; running time.

C.4 Electrical System

Any relevant limits including those associated with degraded modes or load shedding; battery limits. Limitations on the testing of warning systems in-flight.

C.5 Hydraulic System

System temperature and pressure limits. Any limits associated with degraded modes; ground use limits; limitations on any services provided by hydraulic system.

C.6 Fuel System

Minimum fuel for flight; altitude limits associated with booster or fuel pump operation; any cross-feeding limitations; refuelling and de-fuelling limits; in-flight refuelling limitations; use of icing inhibitors.

C.7 Engines and Transmission

System temperature and pressure limits; starting limits; running time; limits on in-flight shut down or in-flight re-light. Torque; compressor speed; gas temperature; free turbine limits.

If required, sub-sections on: propellers; reheat; water injection; rotors etc.

C.8 Environmental Conditioning System

Associated system limits and operational constraints for Aircrew, cargo and equipment, including oxygen system.

C.9 Canopy / Windscreen

Associated system limits; operational constraints.

C.10 Undercarriage

Associated system limits; operational constraints.

C.11 Emergency and Escape Systems

Needs to include any limits associated with escape systems, emergency avionics such as cockpit voice recorders, sonar location beacons etc. Limitations on ejection mass and how mass is defined (eg walk out mass, total mass etc). Emergency lighting limitations.

C.12 Fire Protection System

All limitations associated with fire detection and fire fighting system for airframe and engine.

C.13 Ice Detection and Ice Protection Systems

All limitations associated with the functioning of the ice detection system and ice protection (de-icing, anti-icing) systems. Limitations on the operational envelope imposed by the capability of the ice detection / protection are expressed in Parts B1, B2, B3 and B6 as appropriate.

C.14 Flying Control System

All limitations associated with flying controls, lifting surfaces etc.

C.15 Stability Augmentation / Autopilot System

Limitations associated with any form of stability augmentation or autopilot system, including degraded mode limits. Stability augmentation equipment autopilot modes including engagement / disengagement / mode failure constraints; any specific flying control limitations (eg any need to keep hands on stick); minimum operating height to allow for recovery from runaway.

C.16 Communication Systems

Limitation of the use of communication equipment; including homing equipment and data links (for example RPAS); operational performance constraints.

C.17 Navigation Systems and Sensors

Limitation associated with use of navigation equipment (eg GPS, RAD Alt, TACAN, digital maps, PBN, RVSM etc); operational constraints which affect performance.

C.18 Mission Management Systems

Mission management systems include weapon aiming systems.

C.19 Operational / Mission Sensors

Any limitations or operational constraints associated with ESM, optical, sonar, sonic sensor systems, IFF, radar: needs to include operating performance constraints such as areas of blanking etc.

C.20 Defensive Aids

Installed system limits where these form part of an integrated suite or are individual items.

C.21 Armament System

Identification of armament / stores management systems, stores and associated limits (eg HIRTA, RAD Haz) imposed on the Air System by its armament systems. Carriage, Release and Jettison limits may either be included here (where they can be simply expressed; for example where an Air System carries a single store type and which is not configuration dependent), or reference may be made to Part D (where there may be a number of different stores, configurations and other associated variables). MPTF(In-Service) limitations need to be consistent with weapon aiming and mission management system limits. Limitations associated with the use of integral guns, as opposed to role fit guns, would appear here. Role fit guns would appear in Part D.

C.22 Role Equipment

Where the Sponsor judge it convenient and appropriate, rather than using Part D, list equipment and respective limits for equipment which is related to a role or roles but is normally carried in or on the Air System as normal fit.

Part D – Role Limitations and Constraints

The Air System configuration(s) for each role needs to be listed including any Equipment Not Basic to the Air System, or are to be removed from the basic design standard. Cleared equipment for each role fit must be listed (eg HUSLE). Any additional or different limits to those in Parts B and C which need to be observed as a result of these configurations must be detailed.

Where equipment is role-related but not considered a role fit item (eg a hoist which is fitted all the time as opposed to solely during SAR missions) this needs to be included in Section C.

When operation is dependent on the Air System configuration this will be expressed unambiguously (eg including reference to the relevant modification number). If necessary, compatibility matrices are to be used.

Where a CLE is appropriate, it is referenced in Part F and the detail is placed in Part D.

Part D is likely to be highly Air System specific.

The headings suggested are indicative and not prescriptive.

Examples of section headings for a Fixed Wing Air System include:

Authorized Configurations (with associated Carriage, Release and Jettison limits)

Air to Air Refuelling

Target Towing

Loading Limitations (including passengers and freight)

Ferry Configurations

Air Drop

Parachuting

Reconnaissance

Examples of section headings for a Rotary Wing Air System include:

Underslung Load Operations

Winch Operations

Casevac

ASW

ASuW

Troop Carrying

SAR

Parachuting

Surveillance

Part E – Temporary information

Part E is reserved for the 'Management of Temporary Information'. Clearances included in this section are to be of a genuinely transitory nature (eg the clearance of a SM for a short duration trial after which it will be removed); or included within this part through operational necessity as a temporary amendment, pending its inclusion in the appropriate part at the next formal amendment of the MPTF(In-Service) and / or ADS. Each element of Part E will have been derived from a supplementary Safety Assessment, and provides information (limitations) on one or more aspects of Air System operation. This section may also be used to promulgate other urgent information to Aircrew pending formal amendment of Aircrew publications (eg operating data in support of a new clearance). This part may also be used for time-limited clearances (eg any that are specific to an operation or exercise), and where it is expected that they will not form part of the MPTF(In-Service) in the longer term.

The Sponsor has the option to place the Temporary Clearances entirely within Part E of the MPTF(In-Service), or to insert pages in the appropriate places throughout the ADS, or a combination, whichever method suits the particular circumstances.

This section may be subdivided into the following sections:

Record of Temporary Clearances.

Record of Temporary Restrictions.

Record of Temporary Information Notices.

The information within Part E must provide:

A record of all current Temporary Clearances;

The definition of the applicability of each Temporary Clearance (eg tail number, OEU flying only, named exercise, named operation);

The arrangements for withdrawal of each Temporary Clearance (eg calendar, embodiment of a modification);

A definition of the parts of the ADS affected by each Temporary Clearance;

The location of the information relating to the Temporary Clearance.

This must be done with a table of the following form:

<i>Temporary Clearance No</i>	<i>Title</i>	<i>Applicability</i>	<i>Arrangement for Withdrawal (to include duration)</i>	<i>Affected parts of ADS</i>	<i>Location of Temporary Clearance</i>

If appropriate, specific Temporary Clearances may be included within Section E. It is suggested that this be presented under suitable sub-heading(s) below sub-section E.2 (eg 'E.2.1 Temporary Clearance {insert number} - Limitations for Operation {insert title}').

Part F – Clearances with Limited Evidence

The purpose of Part F is to record where information has been included within the MPTF(In-Service) that has not been derived from a fully substantiated Safety Assessment; such clearances are termed 'Clearances with Limited Evidence' (CLE). Each CLE will be integrated into the appropriate part of the MPTF(In-Service), and identified as a CLE through cross referencing to the Part F register. Such clearances are subject to periodic review, frequent amendment, and some may be applicable only to certain marks, operating units or even individual Air Systems. Following a periodic review or change to such clearance, the applicability and validity of the CLE may change.

The information within Part F.1 must provide:

The title of the CLE.

A record of all current CLEs.

The definition of the applicability of each CLE (eg Tail Number, OEU flying only, named exercise, named operation).

The validity of the CLE. The review period is defined in RA 1330¹¹.

The arrangements for withdrawal of each CLE (eg calendar, embodiment of a modification).

A definition of the parts of the ADS affected by each CLE.

The location within the MPTF(In-Service) of the details of the CLE.

F.1 Record of Clearances with Limited Evidence

<i>Clearance with Limited Evidence No</i>	<i>Title</i>	<i>Applicability</i>	<i>Arrangement for Withdrawal</i>	<i>Location within MPTF(In-Service)</i>	<i>Review Date</i>

¹¹ Refer to RA 1330 – Special Clearances.

Part G – MPTF(In-Service) History

Not part of promulgated MPTF(In-Service).

This part covers the historical function required to ensure Airworthiness and will be all the elements of the Safety Assessment. It is a record of all the Safety Assessment data that has been used in compiling the MPTF(In-Service) and provides justification for all elements of the MPTF(In-Service) content. It is not required that the full audit trail be produced in Part G, but rather that it defines what the Safety Assessment audit trail is, and identifies where the information can be located. It will be maintained by the Operator in conjunction with the TAM throughout the life of the Air System; after the Out of Service Date appropriate data must be retained for 5 years¹². Some elements may exist as databases in their own right. Careful consideration will be given to archiving such material and it is not to be destroyed until at least 5 years¹² after the Air System is Out of Service.

The minimum that is required in Section G is an index of where the following information can be found:

Attribution matrix specifying the source of every element of the earlier parts.

Design documentation (F100 Series Forms etc).

List of Trials and associated Reports not covered by the design documentation.

Details of any Safety Assessments relating to the Air System or its systems.

Details of sentencing of trial recommendations.

Other baseline data used in generating the first issue.

Details of all changes to the initial issue (amendments and subsequent issues) to include: their nature, the reason for their introduction and the individual authorising their implementation.

Acceptable layouts for Part G include, but are not limited to:

A reference to one or more series of files held in particular locations. Thus it could be a list such as: TAM / TAA Safety Assessment files {file series reference}, TAM / TAA modification files {file series reference}, and Independent Evaluation and Audit¹³ reports {reference to list of applicable reports}. Each of these groups of files could, and often will, be held in different locations which need to be specified¹⁴.

A reference to an Airworthiness or Safety Assessment database. Many modern Air Systems will be developed with much, or all, of the information relevant to the MPTF(In-Service) held on a Safety Assessment or configuration database. A reference to this database is acceptable, providing that the database references further source documents, or data¹⁵.

¹² Refer to RA 1225 – Air Safety Documentation Audit Trail.

¹³ Refer to RA 1220 – Delivery Team Airworthiness and Safety.

¹⁴ Refer to RA 1200 – Air Safety Management.

¹⁵ Refer to RA 1310 – Air System Document Set.